

**PLANAR GUIDES TO VISUALLY AID ORTHODONTIC APPLIANCE  
PLACEMENT WITHIN A THREE-DIMENSIONAL (3D) ENVIRONMENT**

**ABSTRACT**

Techniques are described for providing an environment for modeling and depicting a three-dimensional (3D) representation of a patient's dental arch to assist practitioners in orthodontic diagnosis and treatment. A system is described, for example, that includes modeling software executing on a computing device to provide a three-dimensional (3D) environment. The modeling software comprises a rendering engine that renders a digital representation of a dental arch within the 3D environment, and a user interface that displays a planar guide within the 3D environment as a visual aid to a practitioner in the placement of an orthodontic appliance relative to the dental arch. By interacting with the system, orthodontic practitioners are able to visualize the 3D representation of the dental arch, and precisely position "virtual" orthodontic appliances relative to the modeled dental arch.